

AMP Series Airflow Measuring Probe Kits

Differential Pressure Technology - (Models AMP001, AMP002, AMP003)



APPLICATION

Ruskin's AMP series probes are designed to provide accurate flow monitoring at all times. The anodized aluminum step sensor is fastened to a 20 gage galvanized steel mounting plate. Brass fittings are used to connect the high and low pressure chambers of the step sensor to a high performance glass on silicone pressure transducer through 1/4" (6) O.D. polyethylene tubing. All performance data is based on three duct areas tested to AMCA Standard 610 (figures one and two), providing the most comprehensive testing in the industry (refer to page 2).

STANDARD CONSTRUCTION

AMP Mounting Plates	20 ga. G60 galvanized steel.
Step Sensor Extrusion	6063T5 Extruded aluminum, clear anodized finish.
Sensor Port Fittings	1/4 Brass barbed union.
Pressure Tubing	Plenum Rated Polyethylene.
Pressure Transducer	RU-274-R2-VDC, 0-5 or 0-10 VDC output (field selectable). Output signal is proportional to CFM.
Power Requirements	12-40 VDC or 12-35 VAC.
Velocity Requirements	<p>Product Range 400 to 5000 FPM (2.03 to 25.4 m/s)</p> <p>Operating Range</p> <ul style="list-style-type: none"> - 400 to 2000 FPM (2.03 to 10.2 m/s) for units using standard transducer model RU274-R2-VDC or optional model AMS8100-LR. - 400 to 5000 FPM (2.03 to 25.4 m/s) for units using optional transducer model AMS8100
Operating Temperature	-22° F to +140° F standard.
Accuracy	±5% measurement accuracy.

AMP Model Sizing Guidelines

Model	# of probes	Minimum Duct Width	Maximum Duct Width	Minimum Duct Height	Maximum Duct Height
AMP001	1	6"	60"	6"	12"
AMP002	2	6"	60"	12.01"	24"
AMP003	3	6"	60"	24.01"	42"

NOTES:

- Dimensions shown in parenthesis () indicate millimeters.
- Refer to installation details for additional information.
- Probe is furnished 1/4" (6) smaller than given "A" dimension.



AMP001 Single Probe Kit Shown

VARIATIONS

- ▶ AMP series kits are available with an optional transducer to fit your specific application.
- ▶ Model AMS8100 pressure transducer with LCD Display.
- ▶ Model AMS8100-LR pressure transducer with LCD Display.
- ▶ Model DPT-IQ pressure transducer with LCD Display.

AIR PERFORMANCE ± 5% MEASUREMENT ACCURACY

Ruskin test data is based on multiple sizes and AMCA test setup configurations. Compare data to other manufacturers that claim lower accuracy and you will find that their data is based on one size in the most favorable test configuration. Some manufacturers do not even test to AMCA standards. You can trust Ruskin to have the most comprehensive test data in the industry so you can use our products with confidence.

AMCA Standard 610; Test Setup Figure 1 (Straight Duct)							
Test Size	Test Point	PAMS	Reference Volume CFM	Reference Velocity FPM	Indicated Volume CFM	Indicated Velocity FPM	% Accuracy to Reference Airflow
12" X 12" (305 X 305)	1	0.010	251	251	276	276	10.05%
	2	0.020	427	427	405	405	-5.22%
	3	0.225	1592	1592	1536	1536	-3.53%
	4	0.530	2509	2509	2462	2462	-1.86%
	5	0.875	3171	3171	3246	3246	2.36%
	6	1.390	4059	4059	4189	4189	3.19%
24" X 24" (610 X 610)	1	0.010	1179	295	1140	285	-3.31%
	2	0.030	2005	501	1975	494	-1.52%
	3	0.120	4071	1018	3949	987	-2.99%
	4	0.450	7282	1821	7647	1912	5.02%
	5	0.790	9970	2493	10133	2533	1.63%
	6	1.250	13188	3297	12746	3186	-3.35%
36" X 36" (914 X 914)	1	0.005	2094	233	2135	237	1.96%
	2	0.050	6136	682	6375	708	3.90%
	3	0.090	8062	896	8429	937	4.55%
	4	0.480	17895	1988	18671	2075	4.34%
	5	1.100	27799	3089	27687	3076	-0.40%
	6	1.760	36618	4069	34614	3846	-5.47%

AMCA Standard 610; Test Setup Figure 2 (After Elbow)							
Test Size	Test Point	PAMS	Reference Volume CFM	Reference Velocity FPM	Indicated Volume CFM	Indicated Velocity FPM	% Accuracy to Reference Airflow
12" X 12" (305 X 305)	1	0.005	167	167	189	189	12.90%
	2	0.020	406	406	405	405	-0.32%
	3	0.220	1582	1582	1517	1517	-4.12%
	4	0.520	2506	2506	2437	2437	-2.77%
	5	0.840	3187	3187	3174	3174	-0.42%
	6	1.370	4060	4060	4155	4155	2.35%
24" X 24" (610 X 610)	1	0.005	894	224	806	202	-9.83%
	2	0.010	1103	276	1140	285	3.35%
	3	0.035	2003	501	2133	533	6.48%
	4	0.870	10052	2513	10633	2658	5.78%
	5	1.315	13149	3287	13073	3268	-0.58%
	6	2.070	16454	4114	16402	4100	-0.32%
36" X 36" (914 X 914)	1	0.005	2128	236	2135	237	0.33%
	2	0.010	3110	346	2968	330	-4.58%
	3	0.045	6109	679	6064	674	-0.74%
	4	0.085	8038	893	8203	911	2.05%
	5	0.445	17709	1968	18011	2001	1.71%
	6	0.990	27880	3098	26335	2926	-5.54%

NOTES:

- Dimensions shown in parenthesis () indicate millimeters.

AIRFLOW RESISTANCE

AMCA Standard 610; Test Figure 1			AMCA Standard 610; Test Figure 2		
Test Size	Velocity	ΔPD	Test Size	Velocity	ΔPD
12" X 12" (305 X 305)	168	0.000	12" X 12" (305 X 305)	168	0.000
	253	-0.001		244	0.000
	429	0.005		409	0.000
	1051	0.008		1053	0.001
	1589	0.001		1579	0.004
	2506	0.007		2502	0.007
	3168	0.014		3183	0.011
	4058	0.022		4057	0.014
24" X 24" (610 X 610)	224	0.000	24" X 24" (610 X 610)	224	0.000
	295	0.000		276	0.001
	501	0.005		501	0.000
	1081	0.008		1031	0.002
	1821	0.005		1813	0.010
	2492	0.005		2511	0.024
	3295	0.005		3281	0.037
	4045	0.009		4099	0.055
36" X 36" (914 X 914)	233	0.000	36" X 36" (914 X 914)	237	0.000
	359	0.000		346	0.000
	682	0.005		680	0.005
	897	0.010		895	0.009
	1989	0.008		1979	0.004
	3088	0.013		3112	0.010
	4063	0.016		4075	0.017

CALCULATIONS

CFM = (K) x (PAMS) ^M		
Size	K	M
12 x 12 (305 x 305)	3493.6	0.551
24 x 24 (610 x 610)	11400	0.500
36 x 36 (914 x 914)	26460.9	0.4751

TEST CRITERIA

Model	AMP001, AMP002 & AMP003
Method	Differential Pressure
Duct Sizes Tested	12" x 12", 24" x 24" & 36" x 36"
Rated Duct Sized	Rectangular duct with cross-sectional areas between 0.5 and 18 square feet.
Test Setup	AMCA Standard 610, Figures 1 and 2

SPECIFICATION

Furnish and install, at locations shown on plans or as in accordance with schedules, an air measuring probe system piped to a high performance pressure transducer. Kit shall be capable of measuring a range from 400 to 5,000 feet per minute. The Air measuring kit shall consist of 6063T5 extruded aluminum step sensing blade(s) with anodized finish, plenum rated polyethylene pressure tubing, brass barbed pressure fittings, mounting hardware and a glass-on-silicone GL-Si capacitance sensor pressure transducer capable of measuring up to six field selectable pressure ranges up to 1" water column. The transducer shall be accurate to ±1% of full scale and be contained in a NEMA 4 (IP-65) painted steel enclosure. Transducer shall ship loose. Sensor tubing shall be connected to the high and low pressure fittings of the sensing probes. All sensor tubing shall terminate in solid brass, barbed fittings. Air Measuring Probe kits shall be, in all respects, equivalent to Ruskin AMP series probes.

LINKS TO IMPORTANT DOCUMENTS

Document Title
Limited Warranty Document



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